

4.5 Torrance Facility  
Montgomery Watson  
Soil Boring Report



MONTGOMERY WATSON

October 14, 1997

Los Angeles Regional Water Quality Control Board  
101 Centre Plaza Drive  
Monterey Park, CA 91754-2156

Attention: Mr. Jim Ross

Subject: Soil Boring Report: Addendum to Post-Remedial  
Excavation Confirmation Sample Report, Parcel A, Report No. 4  
Boeing Realty Corporation C-6 Facility Demolition  
Los Angeles, California

Dear Mr. Ross:

This letter report is provided as an addendum to the Post-Remedial Excavation Confirmation Sample Report, Parcel A, Report No. 4 (Montgomery Watson, 1997; "the Report"). The purpose of this addendum is to present soil quality data collected from a deep soil boring drilled to assess the depth of diesel-affected soil at the above-referenced site.

## BACKGROUND

As presented in the Report, Open Area No. 1 is located along the eastern portion of the Site, east of Building 37 and Building 41 extending to the Normandie Avenue property boundary. Open Area No. 1 is so designated because of its absence of structures, except for the Building 43/44 water tanks in the northeast corner.

Building 41 was formerly used as a boiler house. The water tanks located at Building 43/44 in the northeast corner of Open Area No. 1 were formerly used to store diesel fuel oil which was pumped into Building 41 through buried product pipelines. These tanks were converted from diesel storage to water tanks (part of the C-6 facility's fire suppression system) approximately 25 years ago. The abandoned product lines leading from the tanks to Building 41 were discovered during the demolition process, and remedial excavations discussed in the Report were conducted to remove primarily hydrocarbon-affected soil associated with releases from these product lines.

Three remedial excavations associated with the hydrocarbon-affected soil are described in the Report. The maximum excavation depth was approximately 12 feet; however, residual hydrocarbon-affected soil was present at the depth of 12 feet at remedial excavation OA1-RE-1.

At the request of the Regional Water Quality Control Board (RWQCB), a deep soil boring was advanced to assess the vertical extent of the affected soil at remedial excavation OA1-RE-1. The boring was located at the bend in the product lines where residual hydrocarbons at the depth of 12 feet were present in concentrations above soil screening levels in confirmation sample OA1-GS-14-12', as presented in the Report. The location of the boring is presented in Figure 1 enclosed. The boring was designated "PL-B1" (representing "Product Lines-Boring No. 1").

## FIELD ACTIVITIES

Field activities were performed on May 17, 1997. All work was performed under the direction of a California Registered Geologist and in accordance with a site-specific health and safety plan. Montgomery Watson subcontracted drilling services to advance boring PL-B1, and provided a California Registered Geologist in the field to oversee the drilling and sampling activities.

Soil samples and quality assurance/quality control samples were collected for analysis in accordance with procedures outlined in the *Sampling and Analysis Plan for Demolition Activities at the Douglas Aircraft Company C-6 Facility* prepared by Integrated Environmental Services, Inc. (IESI, 1997(a)) and previously submitted to the RWQCB.

### Drilling and Sampling Procedures

A truck-mounted mobile drill rig equipped with 6-inch outer diameter hollow-stem augers was used to advance boring PL-B1 to the total depth of 50 feet beneath grade level (bgl) (38 feet beneath the base of remedial excavation OA1-RE-1). During drilling of boring PL-B1, soil samples were retrieved at 5-foot intervals for the purpose of describing the soils. The soil samples were screened for volatile organic vapor content in the field using a photoionization detector (PID). PID readings are included on the enclosed boring log.

Soil samples were retrieved for chemical analysis at depths of 20, 30, 40, and 50 feet bgl and designated PL-B1-20', PL-B1-30', PL-B1-40', and PL-B1-50', respectively. The soil samples were retrieved using a California modified split-spoon sampler equipped with precleaned stainless steel sample sleeves.

Two sample sleeves were retained for analysis at each sampling interval. Upon retrieval, the ends of the sample sleeves were covered with Teflon swatches, capped with plastic end caps, labeled, placed in ziploc bags, logged on a chain-of-custody form, and stored in a cooler chilled with blue ice.

### Decontamination, Containment, and Abandonment

The split-spoon sampler was decontaminated prior to each use by the following method:

- Wash with Alconox and tap water.
- Rinse with tap water.
- Double rinse with distilled water.

Soil cuttings and cleaning rinsate were stored on-site in Department of Transportation-approved 55-gallon steel drums pending proper disposal. Boring PL-B1 was backfilled upon completion with hydrated bentonite chips.

### Quality Assurance/Quality Control

The following quality assurance/quality control (QA/QC) samples were collected:

- 1) One rinsate blank consisting of laboratory-grade deionized water poured through a precleaned sampling sleeve to assess cross-contamination from the sampling equipment.
- 2) One equipment blank consisting of laboratory-grade deionized water poured through a cleaned split-spoon sampler to assess the effectiveness of the decontamination process.
- 3) One trip blank consisting of deionized water provided by the laboratory to assess cross-contamination from sample handling procedures.

### Analytical Program

Soil samples PL-B1-20', PL-B1-30', PL-B1-40', PL-B1-50', and the QA/QC samples were submitted under chain-of-custody documentation to a state-certified laboratory for chemical analysis. Each sample was analyzed for the following constituents:

<u>EPA Method</u>	<u>Analyte(s)</u>
8260	Volatile Organic Compounds (VOCs)*
8270	Semi-volatile Organic Compounds (SVOCs)
6000/7000	CCR Title 22 metals
8080	Pesticides and PCBs **

\* The trip blank was analyzed for volatile organic compounds only.

\*\* Rinsate blank and equipment blank only.

## RESULTS

### Soil Character

The soils encountered in PL-B1 were logged in accordance with the Unified Soil Classification System. The soil encountered consisted of silt and sandy silt from 12 to 27 feet bgl; silty sand and sandy silt from 27 to 39 feet bgl; clayey silt and silt from 39 to 50 feet bgl. Groundwater was not encountered in PL-B1. Soil descriptions are presented on the enclosed boring log.

### Analytical Results

Analytical data are summarized in Table 1 enclosed. These data were compared to soil screening criteria presented in the Report. Included in the soil screening criteria are Site-specific health-based remediation goals (HBRGs) developed by Integrated Environmental Services, Inc. using standard United States Environmental Protection Agency (USEPA) and California Environmental Protection Agency (Cal/EPA) methodologies. Specific HBRGs to be used at the Site are presented in the Report. A more detailed discussion of the methodologies used to derive these values has been presented in the *Health-Based Remediation Goals for Surface Soils* document (IESI, 1997(b)).

The following discussion compares the analytical results to the soil screening criteria presented in the Report.

**VOC:** A total of eight VOCs were detected in samples collected from the depths of 20 feet, 30 feet, and 40 feet bgl; however, the detected concentrations were below HBRGs. VOCs were not detected in the sample collected from 50 feet bgl.

**SVOCs:** A total of 13 SVOCs were detected in samples collected from the depths of 20 feet, 30 feet, and 40 feet bgl. Only benzo(a)pyrene concentration in the sample collected at 20 feet bgl met or exceeded its respective HBRG. SVOCs were not detected in the sample collected from the depth of 50 feet bgl.

**Metals:** All metal concentrations were less than total threshold limit concentrations (TTLC), 10 times the soluble threshold limit concentrations (STLC), and HBRGs.

**QA/QC Samples:** Analytes were not detected in the QA/QC samples.

Laboratory analytical data sheets are enclosed.

## CONCLUSIONS

The data suggest that chemicals in soil which exceed a soil screening criterion are limited to SVOCs and confined to the upper 30 feet bgl. Furthermore, VOCs and SVOCs were not detected in the sample collected from the depth of 50 feet bgl.

Analytes were not detected in the rinsate blank, indicating that the precleaned sampling sleeves did not compromise the data quality. Analytes were not detected in the equipment blank, indicating that the decontamination procedures were effective and did not compromise the data quality. Analytes were not detected in the trip blank, indicating that sample handling techniques did not compromise the data quality.

## REFERENCES

Integrated Environmental Services, Inc., Sampling and Analysis Plan for Demolition Activities at the Douglas Aircraft Company C-6 Facility, 1997(a).

Integrated Environmental Services, Inc., Health-Based Remediation Goals for Surface Soils, 1997(b).

Montgomery Watson, Soil Stockpile Report, Parcel A, Report No. 4, Boeing Realty Corporation C-6 Facility, Los Angeles, California, 1997.

Please call if you have any questions or require any additional information.

Sincerely,

MONTGOMERY WATSON



M. Fred Strauss, R.G.  
Principal Hydrogeologist

### Enclosures

- 1) Figure 1
- 2) Boring Log
- 3) Table 1
- 4) Laboratory Data Sheets

cc: M. Stavale, Boeing Realty Corporation  
M. Young, Integrated Environmental Services, Inc.

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**Enclosures**

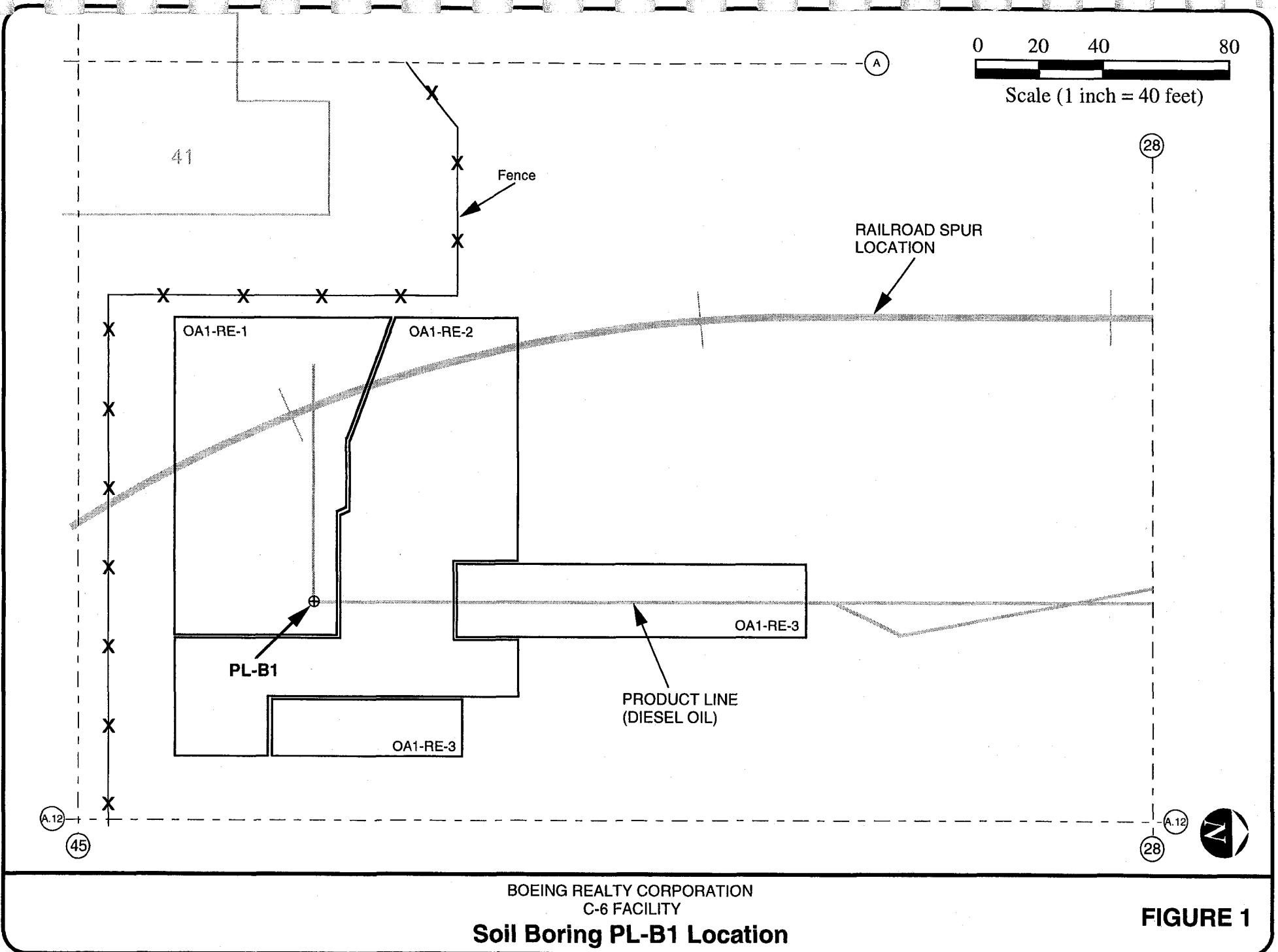
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## **Enclosures**

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**MONTGOMERY WATSON**





# LOG OF TEST BORING

Project The Boeing Company  
C-6 Facility  
Location Los Angeles, CA

Boring No. PL-B1  
Surface Elevation 39.39 ft. MSL  
Job No. 1206035.01090010  
Sheet 1 of 2

250 N. Madison Ave., P.O. Box 7009, Pasadena, CA 91109, TEL. (818) 796-9141

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES	
No.	Type	Rec (in.)	Moist	N		PID	Remarks
1		18	M	17	5 - 10 Base of Remedial Excavation - Started Drilling Here (Elevation = 39.39 ft MSL)	122.9	Time: 0812
				19	15 - 21 SILT (ML): Hard, Gray, 95% Silt, 5% Clay with Moderate Plasticity, Hydrocarbon Odor		Time: 0815
2		18	M	17	20 - 24 SILT (ML): Hard, Brown-Gray, 95% Silt, 5% Fine Sand, Hydrocarbon Odor	139.3	Time: 0820 Sample PL-B1-20'
3		13	M	31	25 - 50 Sandy SILT (ML): Very Hard, Brown and Gray, 75% Silt, 25% Very Fine Sand, Hydrocarbon Odor	160.6	Time: 0825
4		18	M	18	30 - 41 Silty SAND and Sandy SILT (SM/ML): Very Dense/Hard, Brown, 50% Silt, 50% Very Fine Sand, Hydrocarbon Odor	170.4	Time: 0830 Sample PL-B1-30'
5		14	M	29	35 - 50 Silty SAND (SM): Very Dense, Brown, 25% Silt, 75% Very Fine Sand, Hydrocarbon Odor	111.4	Time: 0835
6		18	M	20	40 - 40 -	136.0	Time: 0840 Sample PL-B1-40'

## WATER LEVEL OBSERVATIONS

## GENERAL NOTES

While Drilling ft. Upon Completion of Drilling ft.  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start	<u>8/15/97</u>	End	<u>8/15/97</u>	
Driller	<u>Cascade</u>	Chief	<u>AWN</u>	Rig <u>CME 75</u>
Logger	<u>AWN</u>	Editor	<u>FS</u>	
Drill Method	<u>4 1/4" I.D. HSA</u>			

The stratification lines represent the approximate boundary between soil types  
and the transition may be gradual.

Co3modon/MCDON ID: CANOLINE



## LOG OF TEST BORING

Project The Boeing Company  
C-6 Facility  
Location Los Angeles, CA

Boring No. PL-B1  
Surface Elevation 39.39 ft. MSL  
Job No. 1206035.01090010  
Sheet 2 of 2

250 N. Madison Ave., P.O. Box 7009, Pasadena, CA 91109, TEL. (818) 796-9141

SAMPLE				VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES	
No.	Type Rec (in.)	Moist	N		PID	Remarks
				Clayey SILT (ML): Hard, Brown, 75% Silt, 5% Fine Sand, 20% Clay with Low Plasticity, Hydrocarbon Odor		
7	18	M	24 34	SILT (ML): Hard, Gray, 100% Silt, Slight Hydrocarbon Odor  Grades with Some Clay (15%)	59.0	Time: 0845
8	18	M	23 24 29  16 20 24	Clayey SILT (ML): Hard, Gray-Brown, 80% Silt, 15% Clay with Moderate Plasticity, 5% Fine Sand, No Odor	3.3	Time: 0850 Sample PL-B1-50'
End of Boring at 50.0 ft						
Groundwater Not Encountered						
				55		
				60		
				65		
				70		
				75		
				80		

**TABLE 1**  
**Analytical Data Summary**  
**Soil Boring PL-B1 Samples**

Analyte	EPA Method	Sample Number, Depth, and Collection Date				Regulatory Levels
		PL-B1-20' 20' bg*	PL-B1-30' 30' bg*	PL-B1-40' 40' bg*	PL-B1-50' 50' bg*	
8/15/97	8/15/97	8/15/97	8/15/97	8/15/97	8/15/97	TTLC (mg/kg)
TRPH (mg/kg)	418.1	--	--	--	--	500 15
<b>Title 22 Metals (mg/kg)</b>						
Antimony	6010	<5.0	<5.0	<5.0	<5.0	500 15
Arsenic	6010	<1.0	<1.0	<1.0	<1.0	500 5
Barium	6010	140	120	160	120	10,000 100
Beryllium	6010	<0.1	<0.1	<0.1	<0.1	75 0.75
Cadmium	6010	<0.1	<0.1	<0.1	<0.1	100 1
Chromium (VI)	7196	<0.5	<0.5	<0.5	<0.5	500 5
Chromium (total)	6010	31	33	37	36	2,500 5
Cobalt	6010	7.3	5.4	8.5	8.5	8,000 80
Copper	6010	15	22	23	28	2,500 25
Lead (total)	6010	<1.0	<1.0	<1.0	<1.0	1,000 5
Mercury	7471	<0.01	<0.01	<0.01	<0.01	20 0.2
Molybdenum	6010	<0.5	<0.5	<0.5	<0.5	3,500 350
Nickel	6010	13	16	17	18	2,000 20
Selenium	6010	<1.0	<1.0	<1.0	<1.0	100 1
Silver	6010	<0.1	<0.1	<0.1	<0.1	500 5
Thallium	6010	<5.0	<5.0	<5.0	<5.0	700 7
Vanadium	6010	33	40	44	45	2,400 24
Zinc	6010	45	59	62	57	5,000 250
<b>VOCs (1)(mg/kg)</b>						
Ethylbenzene	8260	5.000	2.000	1.400	<0.0025	
Toluene	8260	<1.000	<1.000	0.690	<0.0025	
Total Xylenes	8260	12.000	28.000	12.000	<0.0025	
n-Propylbenzene	8260	2.500	1.400	0.910	<0.0025	
1,3,5-Trimethylbenzene	8260	15.000	14.000	5.900	<0.0025	
1,2,4-Trimethylbenzene	8260	45.000	42.000	19.000	<0.0025	
n-Butylbenzene	8260	3.100	2.500	1.300	<0.0025	
Naphthalene	8260	120.000	110.000	36.000	<0.0025	
<b>SVOCs (1)(mg/kg)</b>						
Acenaphthene	8270	6.500	2.700	<2.000	<0.100	
Anthracene	8270	7.400	3.200	3.300	<0.100	
Benzo (a) Anthracene	8270	11.000	3.400	4.200	<0.100	
Benzo (g,h,i) Perylene	8270	7.800	<5.000	<5.000	<0.250	
Benzo (a) Pyrene	8270	13.000 #	<5.000	<5.000	<0.250	
bis (2-Ethylhexyl)Phthalate	8270	2.300	<2.000	<2.000	<0.100	
Chrysene	8270	22.000	7.500	7.500	<0.100	
Fluoranthene	8270	5.700	<2.000	<2.000	<0.100	
Fluorene	8270	16.000	6.300	6.400	<0.100	
2-Methylnaphthalene	8270	250.000	100.000	95.000	<0.100	
Naphthalene	8270	78.000	27.000	20.000	<0.100	
Phenanthrene	8270	73.000	28.000	29.000	<0.100	
Pyrene	8270	51.000	18.000	20.000	<0.100	
<b>Carbon Chain Range (mg/kg)</b>	8015m	--	--	--	--	
<b>PCBs (mg/kg)</b>	8080	--	--	--	--	

mg/kg = milligrams per kilogram  
 mg/L = milligrams per liter

-- = not analyzed

\*bg = below original surface grade

VOCs = Volatile Organic Compounds

SVOCs = Semi-volatile Organic Compounds

TRPH = Total Recoverable Petroleum Hydrocarbons

PCBs = polychlorinated biphenyls

(1) VOCs and SVOCs not listed were not detected

TTLC = California Total Threshold Limit Concentration

STLC = California Soluble Threshold Limit Concentration

# = Exceeds Screening Level

Refer to Figure 1 for sample location



ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532

Tustin, CA 92680

(714) 832-0064, Fax (714) 832-0067

Analytical Services  
Chain of Custody Record

Page

1

24 hr TAT on Soil TRPH only.  
Standard TAT otherwise.  
REQUIRED TAT:

CUSTOMER INFORMATION		PROJECT INFORMATION		ANALYSIS/METHOD REQUEST										
COMPANY: Montgomery Watson	SEND REPORT TO: Fred Strauss	PROJECT NAME: Mc Donnell Douglas	NUMBER: 1206035.01090010											
ADDRESS: 250 N. Madison Ave. Pasadena, CA 91101		LOCATION: C-6 Facility												
PHONE: 818-568-6582	FAX: 818-796-5941	SAMPLED BY: AWN/IV/CW	ADDRESS: 19503 S. Normandie Ave. Los Angeles, CA											
SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME		SAMPLE MATRIX	CONTAINER TYPE	PRES.	TRPH	TITLE	VOCs	22 Metals	SVOCs	PCBs	Pesticides
PL-B1-20'	2	8/15/97	0820		SOIL	2"X6" SS SLEEVE	ICE	X	X	X				
PL-B1-30'	2		0830					X	X	X				
PL-B1-40'	2		0840					X	X	X				
PL-B1-50'	2		0850				X	X	X					
Rinsate Blank/ Equipment Blank	7		1050	WATER	10mL 2 vials	None HNO3 HCl	X	X	X	X	X	X	X	
Trip Blank	2		1145				X	X	X	X	X	X	X	
			—		2 vials	HCl	X							
Total No. of Samples: 7	Method of Shipment: 1 cooler via Orange Coast Courier													
Relinquished By: Adam J. Varnis	Date/Time: 8/15/97 15:15	Received By:	Date/Time:			Reporting Format: (check)								
						NORMAL	S.D. HMMD							
Relinquished By:	Date/Time:	Received By:	Date/Time:			RWQCB	OTHER							
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time:			Sample Integrity: (check)								
		John Varnis	8/15/97 15:15			intact	on ice							

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.



## ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Soil, PL-B1-20'

**Sampled:** 08/15/97

**Received:** 08/15/97

**Analyzed:** 08/20/97

**Reported:** 08/22/97

**Laboratory Sample Number:** 97080226  
**Laboratory Reference #:** MWI 9457

### CCR - METALS

<b>Analyte</b>	<b>EPA Method</b>	<b>STLC Limits mg/l</b>	<b>TTLC Limits mg/kg</b>	<b>Detection Limit mg/kg</b>	<b>Analysis Result mg/kg</b>
Antimony	6010	15	500	5.0	N.D.
Arsenic	6010	5.0	500	1.0	N.D.
Barium	6010	100	10000	0.1	140 <---
Beryllium	6010	0.75	75	0.1	N.D.
Cadmium	6010	1.0	100	0.1	N.D.
Chromium (VI)	7196	5.0	500	0.5	N.D.
Chromium Total	6010	560	2500	0.05	31 <---
Cobalt	6010	80	8000	0.5	7.3 <---
Copper	6010	25	2500	0.1	15 <---
Lead	6010	5.0	1000	1.0	N.D.
Mercury	7471	0.2	20	0.01	N.D.
Molybdenum	6010	350	3500	0.5	N.D.
Nickel	6010	20	2000	0.5	13 <---
Selenium	6010	1.0	100	1.0	N.D.
Silver	6010	5.0	500	0.1	N.D.
Thallium	6010	7.0	700	5.0	N.D.
Vanadium	6010	24	2400	0.5	33 <---
Zinc	6010	250	5000	0.1	45 <---

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

*Mark Noorani*

Mark Noorani  
Laboratory Director



# ORANGE COAST ANALYTICAL, INC.

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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-30'

Sampled: 08/15/97

Received: 08/15/97

Analyzed: 08/20/97

Reported: 08/22/97

Laboratory Sample Number: 97080227  
Laboratory Reference #: MWI 9457

## CCR - METALS

Analyte	EPA Method	STLC Limits mg/l	TTLC Limits mg/kg	Detection Limit mg/kg	Analysis Result mg/kg
Antimony	6010	15	500	5.0	N.D.
Arsenic	6010	5.0	500	1.0	N.D.
Barium	6010	100	10000	0.1	120 <---
Beryllium	6010	0.75	75	0.1	N.D.
Cadmium	6010	1.0	100	0.1	N.D.
Chromium (VI)	7196	5.0	500	0.5	N.D.
Chromium Total	6010	560	2500	0.05	33 <---
Cobalt	6010	80	8000	0.5	5.4 <---
Copper	6010	25	2500	0.1	22 <---
Lead	6010	5.0	1000	1.0	N.D.
Mercury	7471	0.2	20	0.01	N.D.
Molybdenum	6010	350	3500	0.5	N.D.
Nickel	6010	20	2000	0.5	16 <---
Selenium	6010	1.0	100	1.0	N.D.
Silver	6010	5.0	500	0.1	N.D.
Thallium	6010	7.0	700	5.0	N.D.
Vanadium	6010	24	2400	0.5	40 <---
Zinc	6010	250	5000	0.1	59 <---

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani  
Mark Noorani  
Laboratory Director



# ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-40'

Sampled: 08/15/97

Received: 08/15/97

Analyzed: 08/20/97

Reported: 08/22/97

Laboratory Sample Number: 97080228  
Laboratory Reference #: MWI 9457

## CCR - METALS

Analyte	EPA Method	STLC Limits mg/l	TTLC Limits mg/kg	Detection Limit mg/kg	Analysis Result mg/kg
Antimony	6010	15	500	5.0	N.D.
Arsenic	6010	5.0	500	1.0	N.D.
Barium	6010	100	10000	0.1	160 <---
Beryllium	6010	0.75	75	0.1	N.D.
Cadmium	6010	1.0	100	0.1	N.D.
Chromium (VI)	7196	5.0	500	0.5	N.D.
Chromium Total	6010	560	2500	0.05	37 <---
Cobalt	6010	80	8000	0.5	8.5 <---
Copper	6010	25	2500	0.1	23 <---
Lead	6010	5.0	1000	1.0	N.D.
Mercury	7471	0.2	20	0.01	N.D.
Molybdenum	6010	350	3500	0.5	N.D.
Nickel	6010	20	2000	0.5	17 <---
Selenium	6010	1.0	100	1.0	N.D.
Silver	6010	5.0	500	0.1	N.D.
Thallium	6010	7.0	700	5.0	N.D.
Vanadium	6010	24	2400	0.5	44 <---
Zinc	6010	250	5000	0.1	62 <---

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

*Mark Noorani*

Mark Noorani  
Laboratory Director



# ORANGE COAST ANALYTICAL, INC.

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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Soil, PL-B1-50'

**Sampled:** 08/15/97

**Received:** 08/15/97

**Analyzed:** 08/20/97

**Reported:** 08/22/97

**Laboratory Sample Number:** 97080229

**Laboratory Reference #:** MWI 9457

## CCR - METALS

<b>Analyte</b>	<b>EPA Method</b>	<b>STLC Limits</b> <i>mg/l</i>	<b>TTLC Limits</b> <i>mg/kg</i>	<b>Detection Limit</b> <i>mg/kg</i>	<b>Analysis Result</b> <i>mg/kg</i>
Antimony	6010	15	500	5.0	N.D.
Arsenic	6010	5.0	500	1.0	N.D.
Barium	6010	100	10000	0.1	120 <---
Beryllium	6010	0.75	75	0.1	N.D.
Cadmium	6010	1.0	100	0.1	N.D.
Chromium (VI)	7196	5.0	500	0.5	N.D.
Chromium Total	6010	560	2500	0.05	36 <---
Cobalt	6010	80	8000	0.5	8.5 <---
Copper	6010	25	2500	0.1	28 <---
Lead	6010	5.0	1000	1.0	N.D.
Mercury	7471	0.2	20	0.01	N.D.
Molybdenum	6010	350	3500	0.5	N.D.
Nickel	6010	20	2000	0.5	18 <---
Selenium	6010	1.0	100	1.0	N.D.
Silver	6010	5.0	500	0.1	N.D.
Thallium	6010	7.0	700	5.0	N.D.
Vanadium	6010	24	2400	0.5	45 <---
Zinc	6010	250	5000	0.1	57 <---

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

*Mark Noorani*  
Mark Noorani  
Laboratory Director



# ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

**Client Project ID:** McDonnell Douglas  
**Client Project #:** 1206035.01090010

**Sample Description:** Soil, PL-B1-20'  
**Laboratory Sample Number:** 97080226  
**Laboratory Reference #:** MWI 9457

**Sampled:** 08/15/97  
**Received:** 08/15/97  
**Analyzed:** 08/21/97  
**Reported:** 08/22/97

## VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Benzene	71-43-2	1000	N.D.
Bromodichloromethane	75-27-4	1000	N.D.
Bromoform	75-25-2	1000	N.D.
Bromomethane	74-83-9	1000	N.D.
Carbon Disulfide	75-15-0	2000	N.D.
Carbon tetrachloride	56-23-5	1000	N.D.
Chlorobenzene	108-90-7	1000	N.D.
Chlorodibromomethane	124-48-1	1000	N.D.
Chloroethane	75-00-3	1000	N.D.
2-Chloroethyl vinyl ether	110-75-8	2000	N.D.
Chloroform	67-66-3	1000	N.D.
Chloromethane	74-87-3	1000	N.D.
1,1-Dichloroethane	75-34-3	1000	N.D.
1,2-Dichloroethane	107-06-2	1000	N.D.
1,1-Dichloroethene	75-35-4	1000	N.D.
Trans 1,2-Dichloroethene	156-60-5	1000	N.D.
1,2-Dichloropropane	78-87-5	1000	N.D.
cis-1,3-Dichloropropene	10061-01-5	1000	N.D.
trans-1,3-Dichloropropene	10061-02-6	1000	N.D.
Ethylbenzene	100-41-4	1000	5,000 <----
Methylene chloride	75-09-2	2000	N.D.
Styrene	100-42-5	1000	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1000	N.D.
Tetrachloroethene	127-18-4	1000	N.D.
Toluene	108-88-3	1000	N.D.
1,1,1-Trichloroethane	71-55-6	1000	N.D.
1,1,2-Trichloroethane	79-00-5	1000	N.D.
Trichloroethene	79-01-6	1000	N.D.
Trichlorofluoromethane	75-69-4	2000	N.D.
Vinyl acetate	108-05-4	2000	N.D.
Vinyl chloride	75-01-4	1000	N.D.
Total Xylenes	1330-20-7	1000	12,000 <----
Dichlorodifluoromethane	75-71-8	1000	N.D.
cis-1,2,-Dichloroethene	156-59-2	1000	N.D.
2,2-Dichloropropane	594-20-7	1000	N.D.
Bromochloromethane	74-97-5	1000	N.D.
1,1-Dichloropropene	563-58-6	1000	N.D.
Dibromomethane	74-95-3	1000	N.D.
1,2-Dibromoethane	106-93-4	1000	N.D.



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### VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Soil, PL-B1-20'

Laboratory Sample #: 97080226

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
1,3-Dichloropropane	142-28-9	1000	N.D.
Isopropylbenzene	98-82-8	1000	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1000	N.D.
1,2,3-Trichloropropane	96-18-4	1000	N.D.
Bromobenzene	108-86-1	1000	N.D.
n-Propylbenzene	103-65-1	1000	2,500 <----
2-Chlorotoluene	95-49-8	1000	N.D.
1,3,5-Trimethylbenzene	108-67-8	1000	15,000 <----
4-Chlorotoluene	106-43-4	1000	N.D.
tert-Butylbenzene	98-06-6	1000	N.D.
1,2,4-Trimethylbenzene	95-63-6	1000	45,000 <----
sec-Butylbenzene	135-98-8	1000	N.D.
4-Isopropyltoluene	99-87-6	1000	N.D.
1,3-Dichlorobenzene	541-73-1	1000	N.D.
1,4-Dichlorobenzene	106-46-7	1000	N.D.
n-Butylbenzene	104-51-8	1000	3,100 <----
1,2-Dichlorobenzene	95-50-1	1000	N.D.
1,2-Dibromo-3-CPA	96-12-8	2000	N.D.
1,2,4-Trichlorobenzene	120-82-1	1000	N.D.
Hexachlorobutadiene	87-68-3	1000	N.D.
Naphthalene	91-20-3	1000	120,000 <----
1,2,3-Trichlorobenzene	87-61-6	1000	N.D.

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Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

*Muthu Samiappan*  
Mark Noorani  
Laboratory Director

Surrogate Recoveries %

Dibromofluoromethane	101
Toluene-d8	105
4-Bromofluorobenzene	101



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**Montgomery Watson**

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

**Client Project ID:** McDonnell Douglas  
**Client Project #:** 1206035.01090010

**Sample Description:** Soil, PL-B1-30'  
**Laboratory Sample Number:** 97080227  
**Laboratory Reference #:** MWI 9457

**Sampled:** 08/15/97  
**Received:** 08/15/97  
**Analyzed:** 08/21/97  
**Reported:** 08/22/97

**VOLATILE ORGANICS BY GC/MS (EPA 8260)**

<b>ANALYTE</b>	<b>CAS NUMBER</b>	<b>DETECTION Limit (ug/kg)</b>	<b>SAMPLE RESULTS (ug/kg)</b>
Benzene	71-43-2	1000	N.D.
Bromodichloromethane	75-27-4	1000	N.D.
Bromoform	75-25-2	1000	N.D.
Bromomethane	74-83-9	1000	N.D.
Carbon Disulfide	75-15-0	2000	N.D.
Carbon tetrachloride	56-23-5	1000	N.D.
Chlorobenzene	108-90-7	1000	N.D.
Chlorodibromomethane	124-48-1	1000	N.D.
Chloroethane	75-00-3	1000	N.D.
2-Chloroethyl vinyl ether	110-75-8	2000	N.D.
Chloroform	67-66-3	1000	N.D.
Chloromethane	74-87-3	1000	N.D.
1,1-Dichloroethane	75-34-3	1000	N.D.
1,2-Dichloroethane	107-06-2	1000	N.D.
1,1-Dichloroethene	75-35-4	1000	N.D.
Trans 1,2-Dichloroethene	156-60-5	1000	N.D.
1,2-Dichloropropane	78-87-5	1000	N.D.
cis-1,3-Dichloropropene	10061-01-5	1000	N.D.
trans-1,3-Dichloropropene	10061-02-6	1000	N.D.
Ethylbenzene	100-41-4	1000	2,000 <----
Methylene chloride	75-09-2	2000	N.D.
Styrene	100-42-5	1000	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1000	N.D.
Tetrachloroethene	127-18-4	1000	N.D.
Toluene	108-88-3	1000	N.D.
1,1,1-Trichloroethane	71-55-6	1000	N.D.
1,1,2-Trichloroethane	79-00-5	1000	N.D.
Trichloroethene	79-01-6	1000	N.D.
Trichlorofluoromethane	75-69-4	2000	N.D.
Vinyl acetate	108-05-4	2000	N.D.
Vinyl chloride	75-01-4	1000	N.D.
Total Xylenes	1330-20-7	1000	28,000 <----
Dichlorodifluoromethane	75-71-8	1000	N.D.
cis-1,2-Dichloroethene	156-59-2	1000	N.D.
2,2-Dichloropropane	594-20-7	1000	N.D.
Bromochloromethane	74-97-5	1000	N.D.
1,1-Dichloropropene	563-58-6	1000	N.D.
Dibromomethane	74-95-3	1000	N.D.
1,2-Dibromoethane	106-93-4	1000	N.D.



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### VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Soil, PL-B1-30'

Laboratory Sample #: 97080227

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
1,3-Dichloropropane	142-28-9	1000	N.D.
Isopropylbenzene	98-82-8	1000	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	1000	N.D.
1,2,3-Trichloropropane	96-18-4	1000	N.D.
Bromobenzene	108-86-1	1000	N.D.
n-Propylbenzene	103-65-1	1000	1,400 <---
2-Chlorotoluene	95-49-8	1000	N.D.
1,3,5-Trimethylbenzene	108-67-8	1000	14,000 <---
4-Chlorotoluene	106-43-4	1000	N.D.
tert-Butylbenzene	98-06-6	1000	N.D.
1,2,4-Trimethylbenzene	95-63-6	1000	42,000 <---
sec-Butylbenzene	135-98-8	1000	N.D.
4-Isopropyltoluene	99-87-6	1000	N.D.
1,3-Dichlorobenzene	541-73-1	1000	N.D.
1,4-Dichlorobenzene	106-46-7	1000	N.D.
n-Butylbenzene	104-51-8	1000	2,500 <---
1,2-Dichlorobenzene	95-50-1	1000	N.D.
1,2-Dibromo-3-CPA	96-12-8	2000	N.D.
1,2,4-Trichlorobenzene	120-82-1	1000	N.D.
Hexachlorobutadiene	87-68-3	1000	N.D.
Naphthalene	91-20-3	1000	110,000 <---
1,2,3-Trichlorobenzene	87-61-6	1000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

Mark Noorani  
Laboratory Director

Surrogate Recoveries %

Dibromofluoromethane	103
Toluene-d8	105
4-Bromofluorobenzene	108



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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-40'  
Laboratory Sample Number: 97080228  
Laboratory Reference #: MWI 9457

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/21/97  
Reported: 08/22/97

## VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	CAS NUMBER	DETECTION LIMIT (ug/kg)	SAMPLE RESULTS (ug/kg)
Benzene	71-43-2	250	N.D.
Bromodichloromethane	75-27-4	250	N.D.
Bromoform	75-25-2	250	N.D.
Bromomethane	74-83-9	250	N.D.
Carbon Disulfide	75-15-0	500	N.D.
Carbon tetrachloride	56-23-5	250	N.D.
Chlorobenzene	108-90-7	250	N.D.
Chlorodibromomethane	124-48-1	250	N.D.
Chloroethane	75-00-3	250	N.D.
2-Chloroethyl vinyl ether	110-75-8	500	N.D.
Chloroform	67-66-3	250	N.D.
Chloromethane	74-87-3	250	N.D.
1,1-Dichloroethane	75-34-3	250	N.D.
1,2-Dichloroethane	107-06-2	250	N.D.
1,1-Dichloroethene	75-35-4	250	N.D.
Trans 1,2-Dichloroethene	156-60-5	250	N.D.
1,2-Dichloropropane	78-87-5	250	N.D.
cis-1,3-Dichloropropene	10061-01-5	250	N.D.
trans-1,3-Dichloropropene	10061-02-6	250	N.D.
Ethylbenzene	100-41-4	250	1,400 <---
Methylene chloride	75-09-2	500	N.D.
Styrene	100-42-5	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
Tetrachloroethene	127-18-4	250	N.D.
Toluene	108-88-3	250	690 <--
1,1,1-Trichloroethane	71-55-6	250	N.D.
1,1,2-Trichloroethane	79-00-5	250	N.D.
Trichloroethene	79-01-6	250	N.D.
Trichlorofluoromethane	75-69-4	500	N.D.
Vinyl acetate	108-05-4	500	N.D.
Vinyl chloride	75-01-4	250	N.D.
Total Xylenes	1330-20-7	250	12,000 <--
Dichlorodifluoromethane	75-71-8	250	N.D.
cis-1,2,-Dichloroethene	156-59-2	250	N.D.
2,2-Dichloropropane	594-20-7	250	N.D.
Bromochloromethane	74-97-5	250	N.D.
1,1-Dichloropropene	563-58-6	250	N.D.
Dibromomethane	74-95-3	250	N.D.
1,2-Dibromoethane	106-93-4	250	N.D.



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## VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Soil, PL-B1-40'

Laboratory Sample #: 97080228

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
1,3-Dichloropropane	142-28-9	250	N.D.
Isopropylbenzene	98-82-8	250	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	250	N.D.
1,2,3-Trichloropropane	96-18-4	250	N.D.
Bromobenzene	108-86-1	250	N.D.
n-Propylbenzene	103-65-1	250	910 <---
2-Chlorotoluene	95-49-8	250	N.D.
1,3,5-Trimethylbenzene	108-67-8	250	5,900 <---
4-Chlorotoluene	106-43-4	250	N.D.
tert-Butylbenzene	98-06-6	250	N.D.
1,2,4-Trimethylbenzene	95-63-6	250	19,000 <---
sec-Butylbenzene	135-98-8	250	N.D.
4-Isopropyltoluene	99-87-6	250	N.D.
1,3-Dichlorobenzene	541-73-1	250	N.D.
1,4-Dichlorobenzene	106-46-7	250	N.D.
n-Butylbenzene	104-51-8	250	1,300 <---
1,2-Dichlorobenzene	95-50-1	250	N.D.
1,2-Dibromo-3-CPA	96-12-8	500	N.D.
1,2,4-Trichlorobenzene	120-82-1	250	N.D.
Hexachlorobutadiene	87-68-3	250	N.D.
Naphthalene	91-20-3	250	36,000 <---
1,2,3-Trichlorobenzene	87-61-6	250	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

Mark Noorani  
Laboratory Director

Surrogate Recoveries %

Dibromofluoromethane	102
Toluene-d8	104
4-Bromofluorobenzene	103



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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-50'  
Laboratory Sample Number: 97080229  
Laboratory Reference #: MWI 9457

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/18/97  
Reported: 08/22/97

## VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Benzene	71-43-2	2.5	N.D.
Bromodichloromethane	75-27-4	2.5	N.D.
Bromoform	75-25-2	2.5	N.D.
Bromomethane	74-83-9	2.5	N.D.
Carbon Disulfide	75-15-0	5.0	N.D.
Carbon tetrachloride	56-23-5	2.5	N.D.
Chlorobenzene	108-90-7	2.5	N.D.
Chlorodibromomethane	124-48-1	2.5	N.D.
Chloroethane	75-00-3	2.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	5.0	N.D.
Chloroform	67-66-3	2.5	N.D.
Chloromethane	74-87-3	2.5	N.D.
1,1-Dichloroethane	75-34-3	2.5	N.D.
1,2-Dichloroethane	107-06-2	2.5	N.D.
1,1-Dichloroethene	75-35-4	2.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	2.5	N.D.
1,2-Dichloropropane	78-87-5	2.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	2.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	2.5	N.D.
Ethylbenzene	100-41-4	2.5	N.D.
Methylene chloride	75-09-2	5.0	N.D.
Styrene	100-42-5	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
Tetrachloroethene	127-18-4	2.5	N.D.
Toluene	108-88-3	2.5	N.D.
1,1,1-Trichloroethane	71-55-6	2.5	N.D.
1,1,2-Trichloroethane	79-00-5	2.5	N.D.
Trichloroethene	79-01-6	2.5	N.D.
Trichlorofluoromethane	75-69-4	5.0	N.D.
Vinyl acetate	108-05-4	5.0	N.D.
Vinyl chloride	75-01-4	2.5	N.D.
Total Xylenes	1330-20-7	2.5	N.D.
Dichlorodifluoromethane	75-71-8	2.5	N.D.
cis-1,2,-Dichloroethene	156-59-2	2.5	N.D.
2,2-Dichloropropane	594-20-7	2.5	N.D.
Bromochloromethane	74-97-5	2.5	N.D.
1,1-Dichloropropene	563-58-6	2.5	N.D.
Dibromomethane	74-95-3	2.5	N.D.
1,2-Dibromoethane	106-93-4	2.5	N.D.



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### VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Soil, PL-B1-50'

Laboratory Sample #: 97080229

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
1,3-Dichloropropane	142-28-9	2.5	N.D.
Isopropylbenzene	98-82-8	2.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	2.5	N.D.
1,2,3-Trichloropropane	96-18-4	2.5	N.D.
Bromobenzene	108-86-1	2.5	N.D.
n-Propylbenzene	103-65-1	2.5	N.D.
2-Chlorotoluene	95-49-8	2.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	2.5	N.D.
4-Chlorotoluene	106-43-4	2.5	N.D.
tert-Butylbenzene	98-06-6	2.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	2.5	N.D.
sec-Butylbenzene	135-98-8	2.5	N.D.
4-Isopropyltoluene	99-87-6	2.5	N.D.
1,3-Dichlorobenzene	541-73-1	2.5	N.D.
1,4-Dichlorobenzene	106-46-7	2.5	N.D.
n-Butylbenzene	104-51-8	2.5	N.D.
1,2-Dichlorobenzene	95-50-1	2.5	N.D.
1,2-Dibromo-3-CPA	96-12-8	5.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	2.5	N.D.
Hexachlorobutadiene	87-68-3	2.5	N.D.
Naphthalene	91-20-3	2.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	2.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

*Mark Samies, Jr.*  
Mark Noorani  
Laboratory Director

Surrogate Recoveries %

Dibromofluoromethane	97
Toluene-d8	104
4-Bromofluorobenzene	105



# ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-20'  
Laboratory Sample Number: 97080226  
Laboratory Reference #: MWI 9457

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/18/97  
Reported: 08/22/97

## SEMI VOLATILE ORGANICS BY GC/MS (EPA 8270)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Acenaphthene	83-32-9	2000	6,500 <---
Acenaphthylene	208-96-8	2000	N.D.
Aniline	62-53-3	2000	N.D.
Anthracene	120-12-7	2000	7,400 <---
Benzoic Acid	65-85-0	10000	N.D.
Benzo (a) anthracene	56-55-3	2000	11,000 <---
Benzo (b) fluoranthene	205-99-2	5000	N.D.
Benzo (k) fluoranthene	207-08-9	5000	N.D.
Benzo (g,h,i)perylene	191-24-2	5000	7,800 <---
Benzo (a) pyrene	50-32-8	5000	13,000 <---
Benzyl alcohol	100-51-6	2000	N.D.
Bis(2-chloroethoxy)methane	111-91-1	2000	N.D.
Bis(2-chloroethyl)ether	111-44-4	2000	N.D.
Bis(2-chloroisopropyl)ether	39638-32-9	2000	N.D.
Bis(2-ethylhexyl)phthalate	117-81-7	2000	2300 <----
4-Bromophenyl phenyl ether	101-55-3	2000	N.D.
Butyl benzyl phthalate	85-68-7	2000	N.D.
4-Chloroaniline	106-47-8	2000	N.D.
2-Chloronaphthalene	91-58-7	2000	N.D.
4-Chloro-3-methylphenol	59-50-7	2000	N.D.
2-Chlorophenol	95-57-8	2000	N.D.
4-Chlorophenyl phenyl ehter	7005-72-3	2000	N.D.
Chrysene	218-0109	2000	22,000 <---
Dibenz(a,h)anthracene	53-70-3	2000	N.D.
Dibenzofuran	132-64-9	2000	N.D.
Di-N-butyl phthalate	84-74-2	5000	N.D.
1,3-Dichlorobenzene	541-73-1	2000	N.D.
1,4-Dichlorobenzene	106-46-7	2000	N.D.
1,2-Dichlorobenzene	95-50-1	2000	N.D.
3,3-Dichlorobenzidine	91-94-1	2000	N.D.
2,4-Dichlorophenol	120-83-2	2000	N.D.
Diethyl phthalate	84-66-2	2000	N.D.
2,4-Dimethylphenol	105-67-9	2000	N.D.
Dimethyl phthalate	131-11-3	2000	N.D.
4,6-Dinitro-2-methylphenol	534-52-1	2000	N.D.
2,4-Dinitrophenol	51-28-5	2000	N.D.
2,4-Dinitrotoluene	121-14-2	5000	N.D.
2,6-Dinitrotoluene	606-20-2	5000	N.D.
Di-N-octyl phthalate	117-84-0	5000	N.D.



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### SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270) (continued)

Sample Description: Soil, PL-B1-20'

Laboratory Sample #: 97080226

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Fluoranthene	206-44-0	2000	5,700 <---
Fluorene	86-73-7	2000	16,000 <---
Hexachlorobenzene	118-74-1	2000	N.D.
Hexachlorobutadiene	87-68-3	2000	N.D.
Hexachlorocyclopentadiene	77-47-4	2000	N.D.
Hexachloroethane	67-72-1	2000	N.D.
Indeno(1,2,3-cd)pyrene	193-39-5	5000	N.D.
Isophorone	78-59-1	2000	N.D.
2-Methylnaphthalene	91-57-6	2000	250,000 <---
2-Methylphenol	95-48-7	2000	N.D.
4-Methylphenol	106-44-5	2000	N.D.
Naphthalene	91-20-3	2000	78,000 <---
2-Nitroaniline	88-74-4	5000	N.D.
3-Nitroaniline	99-09-2	5000	N.D.
4-Nitroaniline	100-01-6	5000	N.D.
Nitrobenzene	98-95-3	2000	N.D.
2-Nitrophenol	88-75-5	2000	N.D.
4-Nitrophenol	100-02-7	2000	N.D.
N-Nitrosodiphenylamine	86-30-6	2000	N.D.
N-Nitroso-di-N-propylamine	621-64-7	2000	N.D.
N-Nitrosodimethylamine	62-75-9	2000	N.D.
Pentachlorophenol	87-86-5	5000	N.D.
Phenanthrene	85-01-8	2000	73,000 <---
Phenol	108-95-2	2000	N.D.
Pyrene	129-00-0	2000	51,000 <----
1,2,4-Trichlorobenzene	120-82-1	2000	N.D.
2,4,5-Trichlorophenol	95-95-4	2000	N.D.
2,4,6-Trichlorophenol	88-06-2	2000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

*Mark Noorani*  
Mark Noorani  
Laboratory Director



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### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-30'  
Laboratory Sample Number: 97080227  
Laboratory Reference #: MWI 9457

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/18/97  
Reported: 08/22/97

### SEMI VOLATILE ORGANICS BY GC/MS (EPA 8270)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Acenaphthene	83-32-9	2000	2,700 <---
Acenaphthylene	208-96-8	2000	N.D.
Aniline	62-53-3	2000	N.D.
Anthracene	120-12-7	2000	3,200 <---
Benzoic Acid	65-85-0	10000	N.D.
Benzo (a) anthracene	56-55-3	2000	3,400 <---
Benzo (b) fluoranthene	205-99-2	5000	N.D.
Benzo (k) fluoranthene	207-08-9	5000	N.D.
Benzo (g,h,i)perylene	191-24-2	5000	N.D.
Benzo (a) pyrene	50-32-8	5000	N.D.
Benzyl alcohol	100-51-6	2000	N.D.
Bis(2-chloroethoxy)methane	111-91-1	2000	N.D.
Bis(2-chloroethyl)ether	111-44-4	2000	N.D.
Bis(2-chloroisopropyl)ether	39638-32-9	2000	N.D.
Bis(2-ethylhexyl)phthalate	117-81-7	2000	N.D.
4-Bromophenyl phenyl ether	101-55-3	2000	N.D.
Butyl benzyl phthalate	85-68-7	2000	N.D.
4-Chloroaniline	106-47-8	2000	N.D.
2-Chloronaphthalene	91-58-7	2000	N.D.
4-Chloro-3-methylphenol	59-50-7	2000	N.D.
2-Chlorophenol	95-57-8	2000	N.D.
4-Chlorophenyl phenyl ehter	7005-72-3	2000	N.D.
Chrysene	218-0109	2000	7,500 <---
Dibenz(a,h)anthracene	53-70-3	2000	N.D.
Dibenzofuran	132-64-9	2000	N.D.
Di-N-butyl phthalate	84-74-2	5000	N.D.
1,3-Dichlorobenzene	541-73-1	2000	N.D.
1,4-Dichlorobenzene	106-46-7	2000	N.D.
1,2-Dichlorobenzene	95-50-1	2000	N.D.
3,3-Dichlorobenzidine	91-94-1	2000	N.D.
2,4-Dichlorophenol	120-83-2	2000	N.D.
Diethyl phthalate	84-66-2	2000	N.D.
2,4-Dimethylphenol	105-67-9	2000	N.D.
Dimethyl phthalate	131-11-3	2000	N.D.
4,6-Dinitro-2-methylphenol	534-52-1	2000	N.D.
2,4-Dinitrophenol	51-28-5	2000	N.D.
2,4-Dinitrotoluene	121-14-2	5000	N.D.
2,6-Dinitrotoluene	606-20-2	5000	N.D.
Di-N-octyl phthalate	117-84-0	5000	N.D.



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### SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270) (continued)

Sample Description: Soil, PL-B1-30'

Laboratory Sample #: 97080227

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Fluoranthene	206-44-0	2000	N.D.
Fluorene	86-73-7	2000	6,300 <---
Hexachlorobenzene	118-74-1	2000	N.D.
Hexachlorobutadiene	87-68-3	2000	N.D.
Hexachlorocyclopentadiene	77-47-4	2000	N.D.
Hexachloroethane	67-72-1	2000	N.D.
Indeno(1,2,3-cd)pyrene	193-39-5	5000	N.D.
Isophorone	78-59-1	2000	N.D.
2-Methylnaphthalene	91-57-6	2000	100,000 <---
2-Methylphenol	95-48-7	2000	N.D.
4-Methylphenol	106-44-5	2000	N.D.
Naphthalene	91-20-3	2000	27,000 <---
2-Nitroaniline	88-74-4	5000	N.D.
3-Nitroaniline	99-09-2	5000	N.D.
4-Nitroaniline	100-01-6	5000	N.D.
Nitrobenzene	98-95-3	2000	N.D.
2-Nitrophenol	88-75-5	2000	N.D.
4-Nitrophenol	100-02-7	2000	N.D.
N-Nitrosodiphenylamine	86-30-6	2000	N.D.
N-Nitroso-di-N-propylamine	621-64-7	2000	N.D.
N-Nitrosodimethylamine	62-75-9	2000	N.D.
Pentachlorophenol	87-86-5	5000	N.D.
Phenanthrene	85-01-8	2000	28,000 <---
Phenol	108-95-2	2000	N.D.
Pyrene	129-00-0	2000	18,000 <----
1,2,4-Trichlorobenzene	120-82-1	2000	N.D.
2,4,5-Trichlorophenol	95-95-4	2000	N.D.
2,4,6-Trichlorophenol	88-06-2	2000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

*Mark Noorani*  
Mark Noorani  
Laboratory Director



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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-40'  
Laboratory Sample Number: 97080228  
Laboratory Reference #: MWI 9457

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/18/97  
Reported: 08/22/97

## SEMI VOLATILE ORGANICS BY GC/MS (EPA 8270)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Acenaphthene	83-32-9	2000	N.D.
Acenaphthylene	208-96-8	2000	N.D.
Aniline	62-53-3	2000	N.D.
Anthracene	120-12-7	2000	3,300 <---
Benzoic Acid	65-85-0	10000	N.D.
Benzo (a) anthracene	56-55-3	2000	4,200 <---
Benzo (b) fluoranthene	205-99-2	5000	N.D.
Benzo (k) fluoranthene	207-08-9	5000	N.D.
Benzo (g,h,i)perylene	191-24-2	5000	N.D.
Benzo (a) pyrene	50-32-8	5000	N.D.
Benzyl alcohol	100-51-6	2000	N.D.
Bis(2-chloroethoxy)methane	111-91-1	2000	N.D.
Bis(2-chloroethyl)ether	111-44-4	2000	N.D.
Bis(2-chloroisopropyl)ether	39638-32-9	2000	N.D.
Bis(2-ethylhexyl)phthalate	117-81-7	2000	N.D.
4-Bromophenyl phenyl ether	101-55-3	2000	N.D.
Butyl benzyl phthalate	85-68-7	2000	N.D.
4-Chloroaniline	106-47-8	2000	N.D.
2-Chloronaphthalene	91-58-7	2000	N.D.
4-Chloro-3-methylphenol	59-50-7	2000	N.D.
2-Chlorophenol	95-57-8	2000	N.D.
4-Chlorophenyl phenyl ehter	7005-72-3	2000	N.D.
Chrysene	218-0109	2000	7,500 <---
Dibenz(a,h)anthracene	53-70-3	2000	N.D.
Dibenzofuran	132-64-9	2000	N.D.
Di-N-butyl phthalate	84-74-2	5000	N.D.
1,3-Dichlorobenzene	541-73-1	2000	N.D.
1,4-Dichlorobenzene	106-46-7	2000	N.D.
1,2-Dichlorobenzene	95-50-1	2000	N.D.
3,3-Dichlorobenzidine	91-94-1	2000	N.D.
2,4-Dichlorophenol	120-83-2	2000	N.D.
Diethyl phthalate	84-66-2	2000	N.D.
2,4-Dimethylphenol	105-67-9	2000	N.D.
Dimethyl phthalate	131-11-3	2000	N.D.
4,6-Dinitro-2-methylphenol	534-52-1	2000	N.D.
2,4-Dinitrophenol	51-28-5	2000	N.D.
2,4-Dinitrotoluene	121-14-2	5000	N.D.
2,6-Dinitrotoluene	606-20-2	5000	N.D.
Di-N-octyl phthalate	117-84-0	5000	N.D.



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### SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270) (continued)

Sample Description: Soil, PL-B1-40\*

Laboratory Sample #: 97080228

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Fluoranthene	206-44-0	2000	N.D.
Fluorene	86-73-7	2000	6,400 <---
Hexachlorobenzene	118-74-1	2000	N.D.
Hexachlorobutadiene	87-68-3	2000	N.D.
Hexachlorocyclopentadiene	77-47-4	2000	N.D.
Hexachloroethane	67-72-1	2000	N.D.
Indeno(1,2,3-cd)pyrene	193-39-5	5000	N.D.
Isophorone	78-59-1	2000	N.D.
2-Methylnaphthalene	91-57-6	2000	95,000 <---
2-Methylphenol	95-48-7	2000	N.D.
4-Methylphenol	106-44-5	2000	N.D.
Naphthalene	91-20-3	2000	20,000 <---
2-Nitroaniline	88-74-4	5000	N.D.
3-Nitroaniline	99-09-2	5000	N.D.
4-Nitroaniline	100-01-6	5000	N.D.
Nitrobenzene	98-95-3	2000	N.D.
2-Nitrophenol	88-75-5	2000	N.D.
4-Nitrophenol	100-02-7	2000	N.D.
N-Nitrosodiphenylamine	86-30-6	2000	N.D.
N-Nitroso-di-N-propylamine	621-64-7	2000	N.D.
N-Nitrosodimethylamine	62-75-9	2000	N.D.
Pentachlorophenol	87-86-5	5000	N.D.
Phenanthrene	85-01-8	2000	29,000 <---
Phenol	108-95-2	2000	N.D.
Pyrene	129-00-0	2000	20,000 <----
1,2,4-Trichlorobenzene	120-82-1	2000	N.D.
2,4,5-Trichlorophenol	95-95-4	2000	N.D.
2,4,6-Trichlorophenol	88-06-2	2000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

*Mark Noorani*  
Mark Noorani  
Laboratory Director



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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Soil, PL-B1-50'  
Laboratory Sample Number: 97080229  
Laboratory Reference #: MWI 9457

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/18/97  
Reported: 08/22/97

## SEMI VOLATILE ORGANICS BY GC/MS (EPA 8270)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Acenaphthene	83-32-9	100	N.D.
Acenaphthylene	208-96-8	100	N.D.
Aniline	62-53-3	100	N.D.
Anthracene	120-12-7	100	N.D.
Benzoic Acid	65-85-0	500	N.D.
Benzo (a) anthracene	56-55-3	100	N.D.
Benzo (b) fluoranthene	205-99-2	250	N.D.
Benzo (k) fluoranthene	207-08-9	250	N.D.
Benzo (g,h,i)perylene	191-24-2	250	N.D.
Benzo (a) pyrene	50-32-8	250	N.D.
Benzyl alcohol	100-51-6	100	N.D.
Bis(2-chloroethoxy)methane	111-91-1	100	N.D.
Bis(2-chloroethyl)ether	111-44-4	100	N.D.
Bis(2-chloroisopropyl)ether	39638-32-9	100	N.D.
Bis(2-ethylhexyl)phthalate	117-81-7	100	N.D.
4-Bromophenyl phenyl ether	101-55-3	100	N.D.
Butyl benzyl phthalate	85-68-7	100	N.D.
4-Chloroaniline	106-47-8	100	N.D.
2-Chloronaphthalene	91-58-7	100	N.D.
4-Chloro-3-methylphenol	59-50-7	100	N.D.
2-Chlorophenol	95-57-8	100	N.D.
4-Chlorophenyl phenyl ehter	7005-72-3	100	N.D.
Chrysene	218-0109	100	N.D.
Dibenz(a,h)anthracene	53-70-3	100	N.D.
Dibenzofuran	132-64-9	100	N.D.
Di-N-butyl phthalate	84-74-2	250	N.D.
1,3-Dichlorobenzene	541-73-1	100	N.D.
1,4-Dichlorobenzene	106-46-7	100	N.D.
1,2-Dichlorobenzene	95-50-1	100	N.D.
3,3-Dichlorobenzidine	91-94-1	100	N.D.
2,4-Dichlorophenol	120-83-2	100	N.D.
Diethyl phthalate	84-66-2	100	N.D.
2,4-Dimethylphenol	105-67-9	100	N.D.
Dimethyl phthalate	131-11-3	100	N.D.
4,6-Dinitro-2-methylphenol	534-52-1	100	N.D.
2,4-Dinitrophenol	51-28-5	100	N.D.
2,4-Dinitrotoluene	121-14-2	250	N.D.
2,6-Dinitrotoluene	606-20-2	250	N.D.
Di-N-octyl phthalate	117-84-0	250	N.D.



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### SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270) (continued)

Sample Description: Soil, PL-B1-50'

Laboratory Sample #: 97080229

ANALYTE	CAS NUMBER	DETECTION Limit (ug/kg)	SAMPLE RESULTS (ug/kg)
Fluoranthene	206-44-0	100	N.D.
Fluorene	86-73-7	100	N.D.
Hexachlorobenzene	118-74-1	100	N.D.
Hexachlorobutadiene	87-68-3	100	N.D.
Hexachlorocyclopentadiene	77-47-4	100	N.D.
Hexachloroethane	67-72-1	100	N.D.
Indeno(1,2,3-cd)pyrene	193-39-5	250	N.D.
Isophorone	78-59-1	100	N.D.
2-Methylnaphthalene	91-57-6	100	N.D.
2-Methylphenol	95-48-7	100	N.D.
4-Methylphenol	106-44-5	100	N.D.
Naphthalene	91-20-3	100	N.D.
2-Nitroaniline	88-74-4	250	N.D.
3-Nitroaniline	99-09-2	250	N.D.
4-Nitroaniline	100-01-6	250	N.D.
Nitrobenzene	98-95-3	100	N.D.
2-Nitrophenol	88-75-5	100	N.D.
4-Nitrophenol	100-02-7	100	N.D.
N-Nitrosodiphenylamine	86-30-6	100	N.D.
N-Nitroso-di-N-propylamine	621-64-7	100	N.D.
N-Nitrosodimethylamine	62-75-9	100	N.D.
Pentachlorophenol	87-86-5	250	N.D.
Phenanthrene	85-01-8	100	N.D.
Phenol	108-95-2	100	N.D.
Pyrene	129-00-0	100	N.D.
1,2,4-Trichlorobenzene	120-82-1	100	N.D.
2,4,5-Trichlorophenol	95-95-4	100	N.D.
2,4,6-Trichlorophenol	88-06-2	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

Mark Noorani  
Mark Noorani  
Laboratory Director



## ORANGE COAST ANALYTICAL, INC.

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### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

**Client Project ID:** McDonnell Douglas  
**Client Project #:** 1206035.01090010

**Analysis Method:** 418.1

**Sampled:** 08/15/97

**Sample Description:** Water,

**Received:** 08/15/97

**Laboratory Reference #:** MWI 9457

**Analyzed:** 08/21/97

**Reported:** 08/22/97

### TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

<b>Laboratory Sample Number</b>	<b>Client Sample Number</b>	<b>Extractable Hydrocarbons mg/l (ppm)</b>
97080230	Rinsate Blank	N.D.
97080231	Equipment Blank	N.D.

---

**Detection Limit:** 0.5

Analyte reported as N.D. was not present above the stated limit of detection.

**ORANGE COAST ANALYTICAL**

*Mark Noorani*  
**Mark Noorani**  
**Laboratory Director**



## ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

**Client Project ID:** McDonnell Douglas  
**Client Project #:** 1206035.01090010

**Sample Description:** Water, Rinsate Blank

**Sampled:** 08/15/97

**Received:** 08/15/97

**Analyzed:** 08/20/97

**Reported:** 08/22/97

**Laboratory Sample Number:** 97080230

**Laboratory Reference #:** MWI 9457

### CCR - METALS

<b>Analyte</b>	<b>EPA Method</b>	<b>Detection Limit</b> <i>mg/l</i>	<b>Analysis Result</b> <i>mg/l</i>
Antimony	6010	0.5	N.D.
Arsenic	6010	0.1	N.D.
Barium	6010	0.01	N.D.
Beryllium	6010	0.01	N.D.
Cadmium	6010	0.01	N.D.
Chromium (VI)	7196	0.01	N.D.
Chromium Total	6010	0.01	N.D.
Cobalt	6010	0.05	N.D.
Copper	6010	0.01	N.D.
Lead	6010	0.1	N.D.
Mercury	7471	0.002	N.D.
Molybdenum	6010	0.1	N.D.
Nickel	6010	0.05	N.D.
Selenium	6010	0.1	N.D.
Silver	6010	0.05	N.D.
Thallium	6010	0.5	N.D.
Vanadium	6010	0.1	N.D.
Zinc	6010	0.01	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

### ORANGE COAST ANALYTICAL

Mark Noorani  
Laboratory Director



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3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

**Client Project ID:** McDonnell Douglas  
**Client Project #:** 1206035.01090010

**Sample Description:** Water, Equip Blank

**Sampled:** 08/15/97

**Received:** 08/15/97

**Laboratory Sample Number:** 97080231  
**Laboratory Reference #:** MWI 9457

**Analyzed:** 08/20/97

**Reported:** 08/22/97

### CCR - METALS

<b>Analyte</b>	<b>EPA Method</b>	<b>Detection Limit</b> mg/l	<b>Analysis Result</b> mg/l
Antimony	6010	0.5	N.D.
Arsenic	6010	0.1	N.D.
Barium	6010	0.01	N.D.
Beryllium	6010	0.01	N.D.
Cadmium	6010	0.01	N.D.
Chromium (VI)	7196	0.01	N.D.
Chromium Total	6010	0.01	N.D.
Cobalt	6010	0.05	N.D.
Copper	6010	0.01	N.D.
Lead	6010	0.1	N.D.
Mercury	7471	0.002	N.D.
Molybdenum	6010	0.1	N.D.
Nickel	6010	0.05	N.D.
Selenium	6010	0.1	N.D.
Silver	6010	0.05	N.D.
Thallium	6010	0.5	N.D.
Vanadium	6010	0.1	N.D.
Zinc	6010	0.01	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

*Mark Noorani*

Mark Noorani

Laboratory Director



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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Water, Rinsate Blank  
**Laboratory Sample Number:** 97080230  
**Laboratory Reference #:** MWI 9457

**Sampled:** 08/15/97  
**Received:** 08/15/97  
**Analyzed:** 08/18/97  
**Reported:** 08/22/97

## VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1,2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.



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## VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Rinsate Blank

Laboratory Sample #: 97080230

ANALYTE	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

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Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

Mark Noorani  
Mark Noorani

Laboratory Director

Surrogate Recoveries %

Dibromofluoromethane	101
Toluene-d8	105
4-Bromofluorobenzene	102



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### VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Equipment Blank

Laboratory Sample #: 97080231

ANALYTE	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

---

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

Mark Noorani  
Laboratory Director

Surrogate Recoveries %

Dibromofluoromethane	103
Toluene-d8	108
4-Bromofluorobenzene	103



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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

Sample Description: Water, Trip Blank  
Laboratory Sample Number: 97080232  
Laboratory Reference #: MWI 9457

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/18/97  
Reported: 08/22/97

## VOLATILE ORGANICS BY GC/MS (EPA 8260)

ANALYTE	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
Benzene	71-43-2	0.5	N.D.
Bromodichloromethane	75-27-4	0.5	N.D.
Bromoform	75-25-2	0.5	N.D.
Bromomethane	74-83-9	1.0	N.D.
Carbon Disulfide	75-15-0	0.5	N.D.
Carbon tetrachloride	56-23-5	0.5	N.D.
Chlorobenzene	108-90-7	0.5	N.D.
Chlorodibromomethane	124-48-1	0.5	N.D.
Chloroethane	75-00-3	0.5	N.D.
2-Chloroethyl vinyl ether	110-75-8	0.5	N.D.
Chloroform	67-66-3	0.5	N.D.
Chloromethane	74-87-3	0.5	N.D.
1,1-Dichloroethane	75-34-3	0.5	N.D.
1,2-Dichloroethane	107-06-2	0.5	N.D.
1,1-Dichloroethene	75-35-4	0.5	N.D.
Trans 1,2-Dichloroethene	156-60-5	0.5	N.D.
1,2-Dichloropropane	78-87-5	0.5	N.D.
cis-1,3-Dichloropropene	10061-01-5	0.5	N.D.
trans-1,3-Dichloropropene	10061-02-6	0.5	N.D.
Ethylbenzene	100-41-4	0.5	N.D.
Methylene chloride	75-09-2	2.5	N.D.
Styrene	100-42-5	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
Tetrachloroethene	127-18-4	0.5	N.D.
Toluene	108-88-3	0.5	N.D.
1,1,1-Trichloroethane	71-55-6	0.5	N.D.
1,1,2-Trichloroethane	79-00-5	0.5	N.D.
Trichloroethene	79-01-6	0.5	N.D.
Trichlorofluoromethane	75-69-4	0.5	N.D.
Vinyl acetate	108-05-4	1.0	N.D.
Vinyl chloride	75-01-4	0.5	N.D.
Total Xylenes	1330-20-7	1.0	N.D.
Dichlorodifluoromethane	75-71-8	0.5	N.D.
cis-1,2,-Dichloroethene	156-59-2	0.5	N.D.
2,2-Dichloropropane	594-20-7	0.5	N.D.
Bromochloromethane	74-97-5	0.5	N.D.
1,1-Dichloropropene	563-58-6	0.5	N.D.
Dibromomethane	74-95-3	0.5	N.D.
1,2-Dibromoethane	106-93-4	0.5	N.D.



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### VOLATILE ORGANICS BY GC/MS (EPA 8260) (continued)

Sample Description: Water, Trip Blank

Laboratory Sample #: 97080232

ANALYTE	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
1,3-Dichloropropane	142-28-9	0.5	N.D.
Isopropylbenzene	98-82-8	0.5	N.D.
1,1,2,2-Tetrachloroethane	79-34-5	0.5	N.D.
1,2,3-Trichloropropane	96-18-4	0.5	N.D.
Bromobenzene	108-86-1	0.5	N.D.
n-Propylbenzene	103-65-1	0.5	N.D.
2-Chlorotoluene	95-49-8	0.5	N.D.
1,3,5-Trimethylbenzene	108-67-8	0.5	N.D.
4-Chlorotoluene	106-43-4	0.5	N.D.
tert-Butylbenzene	98-06-6	0.5	N.D.
1,2,4-Trimethylbenzene	95-63-6	0.5	N.D.
sec-Butylbenzene	135-98-8	0.5	N.D.
4-Isopropyltoluene	99-87-6	0.5	N.D.
1,3-Dichlorobenzene	541-73-1	0.5	N.D.
1,4-Dichlorobenzene	106-46-7	0.5	N.D.
n-Butylbenzene	104-51-8	0.5	N.D.
1,2-Dichlorobenzene	95-50-1	0.5	N.D.
1-2-Dibromo-3-CPA	96-12-8	1.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	0.5	N.D.
Hexachlorobutadiene	87-68-3	0.5	N.D.
Naphthalene	91-20-3	0.5	N.D.
1,2,3-Trichlorobenzene	87-61-6	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

*Mark Noorani*  
Mark Noorani  
Laboratory Director

Surrogate Recoveries %

Dibromofluoromethane	103
Toluene-d8	106
4-Bromofluorobenzene	98



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## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Water, Rinsate Blank  
**Laboratory Sample Number:** 97080230  
**Laboratory Reference #:** MWI 9457

**Sampled:** 08/15/97  
**Received:** 08/15/97  
**Analyzed:** 08/18/97  
**Reported:** 08/22/97

## SEMI VOLATILE ORGANICS BY GC/MS (EPA 8270)

ANALYTE	CAS NUMBER	DETECTION LIMIT (ug/l)	SAMPLE RESULTS (ug/l)
Acenaphthene	83-32-9	5.0	N.D.
Acenaphthylene	208-96-8	5.0	N.D.
Aniline	62-53-3	5.0	N.D.
Anthracene	120-12-7	5.0	N.D.
Benzoic Acid	65-85-0	50	N.D.
Benzo (a) anthracene	56-55-3	5.0	N.D.
Benzo (b) fluoranthene	205-99-2	25	N.D.
Benzo (k) fluoranthene	207-08-9	25	N.D.
Benzo (g,h,i)perylene	191-24-2	25	N.D.
Benzo (a) pyrene	50-32-8	25	N.D.
Benzyl alcohol	100-51-6	50	N.D.
Bis(2-chloroethoxy)methane	111-91-1	5.0	N.D.
Bis(2-chloroethyl)ether	111-44-4	5.0	N.D.
Bis(2-chloroisopropyl)ether	39638-32-9	5.0	N.D.
Bis(2-ethylhexyl)phthalate	117-81-7	3.0	N.D.
4-Bromophenyl phenyl ether	101-55-3	5.0	N.D.
Butyl benzyl phthalate	85-68-7	5.0	N.D.
4-Chloroaniline	106-47-8	5.0	N.D.
2-Chloronaphthalene	91-58-7	5.0	N.D.
4-Chloro-3-methylphenol	59-50-7	5.0	N.D.
2-Chlorophenol	95-57-8	5.0	N.D.
4-Chlorophenyl phenyl ehter	7005-72-3	5.0	N.D.
Chrysene	218-0109	5.0	N.D.
Dibenz(a,h)anthracene	53-70-3	25	N.D.
Dibenzofuran	132-64-9	5.0	N.D.
Di-N-butyl phthalate	84-74-2	5.0	N.D.
1,3-Dichlorobenzene	541-73-1	5.0	N.D.
1,4-Dichlorobenzene	106-46-7	5.0	N.D.
1,2-Dichlorobenzene	95-50-1	5.0	N.D.
3,3-Dichlorobenzidine	91-94-1	5.0	N.D.
2,4-Dichlorophenol	120-83-2	5.0	N.D.
Diethyl phthalate	84-66-2	5.0	N.D.
2,4-Dimethylphenol	105-67-9	5.0	N.D.
Dimethyl phthalate	131-11-3	5.0	N.D.
4,6-Dinitro-2-methylphenol	534-52-1	50	N.D.
2,4-Dinitrophenol	51-28-5	50	N.D.



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## SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270) (continued)

Sample Description: Water, Rinsate Blank

Laboratory Sample #: 97080230

### ANALYTE

	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
2,4-Dinitrotoluene	121-14-2	5.0	N.D.
2,6-Dinitrotoluene	606-20-2	5.0	N.D.
Di-N-octyl phthalate	117-84-0	25	N.D.
Fluoranthene	206-44-0	5.0	N.D.
Fluorene	86-73-7	5.0	N.D.
Hexachlorobenzene	118-74-1	5.0	N.D.
Hexachlorobutadiene	87-68-3	5.0	N.D.
Hexachlorocyclopentadiene	77-47-4	5.0	N.D.
Hexachloroethane	67-72-1	5.0	N.D.
Indeno(1,2,3-cd)pyrene	193-39-5	25	N.D.
Isophorone	78-59-1	5.0	N.D.
2-Methylnaphthalene	91-57-6	5.0	N.D.
2-Methylphenol	95-48-7	5.0	N.D.
4-Methylphenol	106-44-5	5.0	N.D.
Naphthalene	91-20-3	5.0	N.D.
2-Nitroaniline	88-74-4	50	N.D.
3-Nitroaniline	99-09-2	50	N.D.
4-Nitroaniline	100-01-6	50	N.D.
Nitrobenzene	98-95-3	5.0	N.D.
2-Nitrophenol	88-75-5	5.0	N.D.
4-Nitrophenol	100-02-7	50	N.D.
N-Nitrosodiphenylamine	86-30-6	5.0	N.D.
N-Nitroso-di-N-propylamine	621-64-7	5.0	N.D.
N-Nitrosodimethylamine	62-75-9	5.0	N.D.
Pentachlorophenol	87-86-5	50	N.D.
Phenanthrene	85-01-8	5.0	N.D.
Phenol	108-95-2	5.0	N.D.
Pyrene	129-00-0	5.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	5.0	N.D.
2,4,5-Trichlorophenol	95-95-4	5.0	N.D.
2,4,6-Trichlorophenol	88-06-2	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

Mark Noorani  
Mark Noorani

Laboratory Director



# ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

## Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Water, Equipment Blank  
**Laboratory Sample Number:** 97080231  
**Laboratory Reference #:** MWI 9457

**Sampled:** 08/15/97  
**Received:** 08/15/97  
**Analyzed:** 08/18/97  
**Reported:** 08/22/97

## SEMI VOLATILE ORGANICS BY GC/MS (EPA 8270)

ANALYTE	CAS NUMBER	DETECTION LIMIT (ug/l)	SAMPLE RESULTS (ug/l)
Acenaphthene	83-32-9	5.0	N.D.
Acenaphthylene	208-96-8	5.0	N.D.
Aniline	62-53-3	5.0	N.D.
Anthracene	120-12-7	5.0	N.D.
Benzoic Acid	65-85-0	50	N.D.
Benzo (a) anthracene	56-55-3	5.0	N.D.
Benzo (b) fluoranthene	205-99-2	25	N.D.
Benzo (k) fluoranthene	207-08-9	25	N.D.
Benzo (g,h,i)perylene	191-24-2	25	N.D.
Benzo (a) pyrene	50-32-8	25	N.D.
Benzyl alcohol	100-51-6	50	N.D.
Bis(2-chloroethoxy)methane	111-91-1	5.0	N.D.
Bis(2-chloroethyl)ether	111-44-4	5.0	N.D.
Bis(2-chloroisopropyl)ether	39638-32-9	5.0	N.D.
Bis(2-ethylhexyl)phthalate	117-81-7	3.0	N.D.
4-Bromophenyl phenyl ether	101-55-3	5.0	N.D.
Butyl benzyl phthalate	85-68-7	5.0	N.D.
4-Chloroaniline	106-47-8	5.0	N.D.
2-Chloronaphthalene	91-58-7	5.0	N.D.
4-Chloro-3-methylphenol	59-50-7	5.0	N.D.
2-Chlorophenol	95-57-8	5.0	N.D.
4-Chlorophenyl phenyl ehter	7005-72-3	5.0	N.D.
Chrysene	218-0109	5.0	N.D.
Dibenz(a,h)anthracene	53-70-3	25	N.D.
Dibenzofuran	132-64-9	5.0	N.D.
Di-N-butyl phthalate	84-74-2	5.0	N.D.
1,3-Dichlorobenzene	541-73-1	5.0	N.D.
1,4-Dichlorobenzene	106-46-7	5.0	N.D.
1,2-Dichlorobenzene	95-50-1	5.0	N.D.
3,3-Dichlorobenzidine	91-94-1	5.0	N.D.
2,4-Dichlorophenol	120-83-2	5.0	N.D.
Diethyl phthalate	84-66-2	5.0	N.D.
2,4-Dimethylphenol	105-67-9	5.0	N.D.
Dimethyl phthalate	131-11-3	5.0	N.D.
4,6-Dinitro-2-methylphenol	534-52-1	50	N.D.
2,4-Dinitrophenol	51-28-5	50	N.D.



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### SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270) (continued)

Sample Description: Water, Equipment Blank

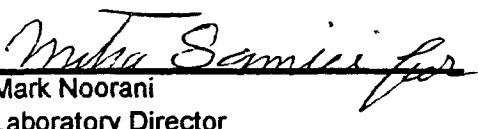
Laboratory Sample #: 97080231

#### ANALYTE

	CAS NUMBER	DETECTION Limit (ug/l)	SAMPLE RESULTS (ug/l)
2,4-Dinitrotoluene	121-14-2	5.0	N.D.
2,6-Dinitrotoluene	606-20-2	5.0	N.D.
Di-N-octyl phthalate	117-84-0	25	N.D.
Fluoranthene	206-44-0	5.0	N.D.
Fluorene	86-73-7	5.0	N.D.
Hexachlorobenzene	118-74-1	5.0	N.D.
Hexachlorobutadiene	87-68-3	5.0	N.D.
Hexachlorocyclopentadiene	77-47-4	5.0	N.D.
Hexachloroethane	67-72-1	5.0	N.D.
Indeno(1,2,3-cd)pyrene	193-39-5	25	N.D.
Isophorone	78-59-1	5.0	N.D.
2-Methylnaphthalene	91-57-6	5.0	N.D.
2-Methylphenol	95-48-7	5.0	N.D.
4-Methylphenol	106-44-5	5.0	N.D.
Naphthalene	91-20-3	5.0	N.D.
2-Nitroaniline	88-74-4	50	N.D.
3-Nitroaniline	99-09-2	50	N.D.
4-Nitroaniline	100-01-6	50	N.D.
Nitrobenzene	98-95-3	5.0	N.D.
2-Nitrophenol	88-75-5	5.0	N.D.
4-Nitrophenol	100-02-7	50	N.D.
N-Nitrosodiphenylamine	86-30-6	5.0	N.D.
N-Nitroso-di-N-propylamine	621-64-7	5.0	N.D.
N-Nitrosodimethylamine	62-75-9	5.0	N.D.
Pentachlorophenol	87-86-5	50	N.D.
Phenanthrene	85-01-8	5.0	N.D.
Phenol	108-95-2	5.0	N.D.
Pyrene	129-00-0	5.0	N.D.
1,2,4-Trichlorobenzene	120-82-1	5.0	N.D.
2,4,5-Trichlorophenol	95-95-4	5.0	N.D.
2,4,6-Trichlorophenol	88-06-2	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical

  
Mark Noorani

Laboratory Director



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### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Water, Rinsate Blank

Sampled: 08/15/97  
Received: 08/15/97  
Analyzed: 08/22/97  
Reported: 08/22/97

Laboratory Sample Number: 97080230  
Laboratory Reference #: MWI 9457

### ORGANOCHLORINE PESTICIDES (EPA 8080)

ANALYTE	CAS NUMBER	DETECTION LIMITS (ug/l)	SAMPLE RESULTS (ug/l)
Aldrin	309-00-2	0.1	N.D.
alpha-BHC	319-84-6	0.2	N.D.
beta-BHC	319-85-7	0.2	N.D.
gamma-BHC	319-86-8	0.2	N.D.
gamma-BHC (Lindane)	58-89-9	0.2	N.D.
Chlordane	57-74-9	0.2	N.D.
4,4'-DDD	72-54-9	0.5	N.D.
4,4'-DDE	72-55-9	0.1	N.D.
4,4'-DDT	50-29-3	0.1	N.D.
Dieldrin	60-57-1	0.5	N.D.
Endosulfan I	959-98-8	0.5	N.D.
Endosulfan II	33213-65-9	0.5	N.D.
Endosulfan sulfate	1031-07-8	0.5	N.D.
Endrin	72-20-8	0.02	N.D.
Endrin aldehyde	7421-93-4	0.2	N.D.
Heptachlor	76-44-8	0.1	N.D.
Heptachlor epoxide	1024-57-3	0.2	N.D.
Methoxychlor	72-43-5	9.0	N.D.
Toxaphene	8001-35-2	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

*Mark Noorani for*  
Mark Noorani  
Laboratory Director



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### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Water, Equipment Blank

Sampled: 08/15/97

Received: 08/15/97

Analyzed: 08/22/97

Reported: 08/22/97

Laboratory Sample Number: 97080231  
Laboratory Reference #: MWI 9457

### ORGANOCHLORINE PESTICIDES (EPA 8080)

ANALYTE	CAS NUMBER	DETECTION LIMITS (ug/l)	SAMPLE RESULTS (ug/l)
Aldrin	309-00-2	0.1	N.D.
alpha-BHC	319-84-6	0.2	N.D.
beta-BHC	319-85-7	0.2	N.D.
gamma-BHC	319-86-8	0.2	N.D.
gamma-BHC (Lindane)	58-89-9	0.2	N.D.
Chlordane	57-74-9	0.2	N.D.
4,4'-DDD	72-54-9	0.5	N.D.
4,4'-DDE	72-55-9	0.1	N.D.
4,4'-DDT	50-29-3	0.1	N.D.
Dieldrin	60-57-1	0.5	N.D.
Endosulfan I	959-98-8	0.5	N.D.
Endosulfan II	33213-65-9	0.5	N.D.
Endosulfan sulfate	1031-07-8	0.5	N.D.
Endrin	72-20-8	0.02	N.D.
Endrin aldehyde	7421-93-4	0.2	N.D.
Heptachlor	76-44-8	0.1	N.D.
Heptachlor epoxide	1024-57-3	0.2	N.D.
Methoxychlor	72-43-5	9.0	N.D.
Toxaphene	8001-35-2	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

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### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

Client Project ID: McDonnell Douglas  
Client Project #: 1206035.01090010

**Sample Description:** Water, Rinsate Blank

**Sampled:** 08/15/97

**Received:** 08/15/97

**Analyzed:** 08/21/97

**Reported:** 08/22/97

**Laboratory Sample Number:** 97080230  
**Laboratory Reference #:** MWI 9457

### PCB'S (EPA 8080)

<b>Analyte</b>	<b>CAS NUMBER</b>	<b>DETECTION LIMITS (ug/l)</b>	<b>SAMPLE RESULTS (ug/l)</b>
PCB-1016	12674-11-2	5.0	N.D.
PCB-1221	11104-28-2	5.0	N.D.
PCB-1232	11141-16-5	5.0	N.D.
PCB-1242	53469-21-9	5.0	N.D.
PCB-1248	12672-29-6	5.0	N.D.
PCB-1254	11097-69-1	5.0	N.D.
PCB-1260	11096-82-5	5.0	N.D.

---

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

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### Montgomery Watson

ATTN: Mr. Fred Strauss  
250 N. Madison Ave.  
Pasadena, CA 91101

**Client Project ID:** McDonnell Douglas  
**Client Project #:** 1206035.01090010

**Sample Description:** Water, Equipment Blank

**Sampled:** 08/15/97  
**Received:** 08/15/97  
**Analyzed:** 08/21/97  
**Reported:** 08/22/97

**Laboratory Sample Number:** 97080231  
**Laboratory Reference #:** MWI 9457

### PCB'S (EPA 8080)

<b>Analyte</b>	<b>CAS NUMBER</b>	<b>DETECTION LIMITS (ug/l)</b>	<b>SAMPLE RESULTS (ug/l)</b>
PCB-1016	12674-11-2	5.0	N.D.
PCB-1221	11104-28-2	5.0	N.D.
PCB-1232	11141-16-5	5.0	N.D.
PCB-1242	53469-21-9	5.0	N.D.
PCB-1248	12672-29-6	5.0	N.D.
PCB-1254	11097-69-1	5.0	N.D.
PCB-1260	11096-82-5	5.0	N.D.

---

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

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### QC DATA REPORT

Analysis : Semi-Volatile Organics by GC/MS (EPA 8270)

Date of Analysis : 08/18/97

Laboratory Sample No : OCA 100

Laboratory Reference No : MWI 9457

Analyte	R1 (ng)	SP (ng)	MS (ng)	MSD (ng)	PR1 %	PR2 %	RPD %
1,4-Dichlorobenzene	0.0	50	36	35	72	70	3
n-Nitroso-di-n-propylamine	0.0	50	46	43	92	86	7
1,2,4-Trichlorobenzene	0.0	50	41	41	82	82	0
Acenaphthene	0.0	50	46	43	92	86	7
Pyrene	0.0	50	49	49	98	98	0
Pentachlorophenol	0.0	100	88	77	88	77	13
4-Chloro-3-Methylphenol	0.0	100	83	75	83	75	10
2-Chlorophenol	0.0	100	78	71	78	71	9
Phenol	0.0	100	31	28	31	28	10

#### Definition of Terms :

R1

P

MS

MSD

R1

R2

RPD

Results Of First Analysis

Spike Concentration Added to Sample

Matrix Spike Results

Matrix Spike Duplicate Results

Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

ORANGE COAST ANALYTICAL

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## QC DATA REPORT

Analysis : Semi-Volatile Organics by GC/MS (EPA 8270)

Date of Analysis : 08/18/97

Laboratory Sample No : 97080229

Laboratory Reference No : MWI 9457

Analyte	R1 (ng)	SP (ng)	MS (ng)	MSD (ng)	PR1 %	PR2 %	RPD %
1,4-Dichlorobenzene	0.0	50	42	42	84	84	0
n-Nitroso-di-n-propylamine	0.0	50	53	51	106	102	4
,2,4-Trichlorobenzene	0.0	50	46	45	92	90	2
Acenaphthene	0.0	50	44	45	88	90	2
Pyrene	0.0	50	45	44	90	88	2
Pentachlorophenol	0.0	100	82	80	82	80	2
4-Chloro-3-Methylphenol	0.0	100	85	80	85	80	6
2-Chlorophenol	0.0	100	79	77	79	77	3
phenol	0.0	100	70	68	70	68	3

### Definition of Terms :

R1	Results Of First Analysis
P	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
R1	Percent Recovery Of MS: $\{(MS-R1) / SP\} \times 100$
R2	Percent Recovery Of MSD: $\{(MSD-R1) / SP\} \times 100$
RPD	Relative Percent Difference: $\{(MS-MSD) / (MS+MSD)\} \times 100 \times 2$

ORANGE COAST ANALYTICAL

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### QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis : 08/18/97

Laboratory Sample No : 97080229

Laboratory Reference No : MWI 9457

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	50	52	46	104	92	12
1,1-Dichloroethene	0.0	50	56	49	112	98	13
Trichloroethene	0.0	50	55	49	110	98	12
Toluene	0.0	50	55	49	110	98	12
Chlorobenzene	0.0	50	51	45	102	90	13

#### Definition of Terms :

R1 Results Of First Analysis

SP Spike Concentration Added to Sample

MS Matrix Spike Results

MSD Matrix Spike Duplicate Results

PR1 Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

PR2 Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

RPD Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

ORANGE COAST ANALYTICAL

  
MARK NOORANI  
Laboratory Director



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## QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis : 08/21/97

Laboratory Sample No : OCA 200

Laboratory Reference No : MWI 9457

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	50	50	50	100	100	0
1,1-Dichloroethene	0.0	50	47	49	94	98	4
Trichloroethene	0.0	50	46	47	92	94	2
Toluene	0.0	50	51	54	102	108	6
Chlorobenzene	0.0	50	51	52	102	104	2

### Definition of Terms :

R1                   Results Of First Analysis

SP                   Spike Concentration Added to Sample

MS                   Matrix Spike Results

MSD                 Matrix Spike Duplicate Results

PR1                 Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

PR2                 Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

RPD                 Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

ORANGE COAST ANALYTICAL

  
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Laboratory Director



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## QC DATA REPORT

Analysis : Volatile Organics by GC/MS (EPA 8260)

Date of Analysis : 08/18/97

Laboratory Sample No : 97080232

Laboratory Reference No : MWI 9457

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0.0	20	18	19	90	95	5
1,1-Dichloroethene	0.0	20	17	18	85	90	6
Trichloroethene	0.0	20	16	17	80	85	6
Toluene	0.0	20	19	20	95	100	5
Chlorobenzene	0.0	20	18	19	90	95	5

### Definition of Terms :

R1 Results Of First Analysis

SP Spike Concentration Added to Sample

MS Matrix Spike Results

MSD Matrix Spike Duplicate Results

PR1 Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

PR2 Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

RPD Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

ORANGE COAST ANALYTICAL

*Mark Noorani*  
MARK NOORANI  
Laboratory Director



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### QC DATA REPORT

Analysis : PCB 'S ( EPA 8080 )

Date of Analysis : 08/21/97

Laboratory Sample No : OCA 100

Laboratory Reference No : MWI 9457

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
PCB-1260	0.0	20	16	14	80	70	13

#### Definition of Terms :

R1

Results Of First Analysis

SP

Spike Concentration Added to Sample

MS

Matrix Spike Results

MSD

Matrix Spike Duplicate Results

PR1

Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

PR2

Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

RPD

Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

ORANGE COAST ANALYTICAL

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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

## QC DATA REPORT

Analysis : Organochlorine Pesticides (EPA 8080)

Date of Analysis : 08/22/97

Laboratory Sample No : OCA 100

Laboratory Reference No : MWI 9457

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
4,4'-DDT	0.0	1.0	0.76	0.78	76	78	3

Definition of Terms :

R1                  Results Of First Analysis

SP                  Spike Concentration Added to Sample

MS                  Matrix Spike Results

MSD                Matrix Spike Duplicate Results

PR1                Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

PR2                Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

RPD                Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

ORANGE COAST ANALYTICAL

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Laboratory Director



# ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067  
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

## QC DATA REPORT

Analysis : Total Recoverable Petroleum Hydrocarbons (EPA 418.1)

Date of Analysis : 08/21/97

Laboratory Sample No : OCA 100

Laboratory Reference No : MWI 9457

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Hydrocarbons	0.0	2.5	2.3	2.4	92	96	4

### Definition of Terms :

R1                   Results Of First Analysis

SP                   Spike Concentration Added to Sample

MS                   Matrix Spike Results

MSD                 Matrix Spike Duplicate Results

PR1                 Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

PR2                 Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

RPD                 Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

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MARK NOORANI

Laboratory Director



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## QC DATA REPORT

Analysis : Metals

Date of Analysis : 08/20/97

Laboratory Sample No : 97080213

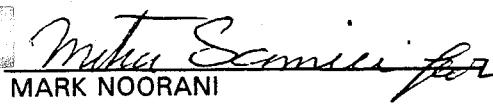
Laboratory Reference No : MWI 9457

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Antimony	0.0	30.0	29.0	27.0	97	90	7
Arsenic	0.0	10.0	9.4	8.7	94	87	8
Barium	14.0	10.0	23.7	22.2	97	82	7
Beryllium	0.00	1.00	0.99	1.00	99	100	1
Cadmium	0.00	1.00	1.00	0.94	100	94	6
Chromium (Total )	3.10	5.00	7.40	7.30	86	84	1
Chromium ( VI )	0.00	1.00	0.86	0.83	86	83	4
Cobalt	1.10	1.00	2.00	2.00	90	90	0
Copper	1.50	1.00	2.35	2.30	85	80	2
Lead	0.00	10.0	8.4	8.0	84	80	5
Mercury	0.000	0.020	0.017	0.017	85	85	0
Molybdenum	0.0	10.0	9.7	9.6	97	96	1
Nickel	1.20	5.00	5.5	5.2	86	80	6
Selenium	0.0	10.0	10.1	9.4	101	94	7
Silver	0.0	5.0	3.7	3.8	74	76	3
Thallium	0.0	20.0	19.0	18.0	95	90	5
Vanadium	3.7	5.0	8.2	8.2	90	90	0
Zinc	5.0	5.0	9.3	9.3	86	86	0

### Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: $\{(MS-R1) / SP\} \times 100$
PR2	Percent Recovery Of MSD: $\{(MSD-R1) / SP\} \times 100$
RPD	Relative Percent Difference: $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

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## QC DATA REPORT

Analysis : Metals

Date of Analysis : 08/20/97

Laboratory Sample No : 97080189

Laboratory Reference No : MWI 9457

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Antimony	0.00	3.00	3.60	3.40	120	113	6
Arsenic	0.00	1.00	1.20	1.15	120	115	4
Barium	0.000	0.100	0.116	0.110	116	110	5
Beryllium	0.00	0.100	0.120	0.119	120	119	1
Cadmium	0.00	0.100	0.120	0.120	120	120	0
Chromium ( VI )	0.00	0.50	0.49	0.48	98	96	2
Chromium (Total)	0.00	0.100	0.110	0.108	110	108	2
Cobalt	0.00	0.100	0.120	0.105	120	105	13
Copper	0.000	0.100	0.100	0.111	100	111	10
Lead	0.00	1.00	1.20	1.16	120	116	3
Mercury	0.000	0.020	0.022	0.021	110	105	5
Molybdenum	0.00	1.00	1.16	1.20	116	120	3
Nickel	0.00	0.50	0.58	0.60	116	120	3
Selenium	0.00	1.00	1.20	1.20	120	120	0
Silver	0.00	0.50	0.58	0.57	116	114	2
Thallium	0.00	3.00	3.60	3.50	120	117	3
Titanium	0.00	0.50	0.56	0.52	112	104	7
Zinc	0.000	0.100	0.112	0.111	112	111	1

### Definition of Terms :

Results Of First Analysis

Spike Concentration Added to Sample

Matrix Spike Results

Matrix Spike Duplicate Results

Percent Recovery Of MS:  $\{(MS-R1) / SP\} \times 100$

Percent Recovery Of MSD:  $\{(MSD-R1) / SP\} \times 100$

Relative Percent Difference:  $\{(MS-MSD) / (MS + MSD)\} \times 100 \times 2$

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